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LAW OFFICES  
**KOTEEN & NAFTALIN, L.L.P.**

1150 CONNECTICUT AVENUE  
WASHINGTON, D.C. 20036-4104

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TELEPHONE  
(202) 467-5700

TELECOPY  
(202) 467-5915

FEDERAL COMMUNICATIONS COMMISSION  
OFFICE OF THE SECRETARY

September 14, 1998

BERNARD KOTEEN\*  
ALAN Y. NAFTALIN  
ARTHUR B. GOODKIND  
GEORGE Y. WHEELER  
MARGOT SMILEY HUMPHREY  
PETER M. CONNOLLY  
CHARLES R. NAFTALIN  
GREGORY C. STAPLE  
R. EDWARD PRICE  
JULIE A. BARRIE  
\* SENIOR COUNSEL

Ms. Magalie Roman Salas  
Secretary  
Federal Communications Commission  
1919 M Street, N. W.  
Washington, DC 20554

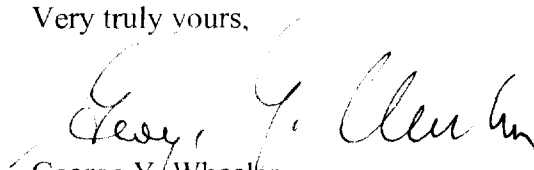
Re: ET Docket No. 98-95  
RM-9096

Dear Ms. Salas:

Transmitted herewith on behalf of Mark IV Industries, Limited, I.V.H.S. Division, by its attorneys, are an original and nine copies of its Comments in the above-captioned matter.

In the event there are any questions concerning this matter, please communicate with the undersigned.

Very truly yours,

  
George Y. Wheeler

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Before the  
Federal Communications Commission  
Washington, D.C. 20554

SEP 14 1998

FEDERAL COMMUNICATIONS COMMISSION  
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In the Matter of	)	
	)	
Amendment of Parts 2 and 90 of the	)	ET Docket No. 98-95
Commission's Rules to Allocate the	)	RM-9096
5.850-5.925 GHz Band to the	)	
Mobile Service for Dedicated Short	)	
Range Communications of Intelligent	)	
Transportation Services	)	

To: The Commission

## COMMENTS

### MARK IV INDUSTRIES, LIMITED, I.V.H.S. DIVISION

Mark IV Industries, Limited, I.V.H.S. Division ("Mark IV") herewith, by its attorneys, files its comments in response to the Commission's Notice of Proposed Rulemaking (FCC 98-119) released June 11, 1998 in the above-captioned proceeding ("NPRM") supporting the allocation of the 5.850-5.925 GHz band to mobile service for dedicated short range communications ("DSRC") in the Intelligent Transportation Services ("ITS").

## BACKGROUND

Mark IV is a manufacturer of devices which are widely used by highway, toll, turnpike, tunnel and bridge authorities in intelligent transportation systems. Mark IV systems are designed to operate in conformance with existing Commission rules pertaining to LMS services in the 902-928 MHz band. These systems employ active and semi-active microwave, short range two-way communication technologies.

microwave, short range two-way communication technologies.

More than 3 million vehicles operating in the United States currently use Mark IV 902-928 MHz technologies. This number is expected to increase substantially in the coming years due to the enormous success and popularity of electronic toll collection, traffic management and commercial vehicle monitoring services. A major example of a system serving many of these vehicles is E-ZPass<sup>SM</sup>, which uses Mark IV technologies to facilitate interoperable electronic toll collection and traffic monitoring applications. E-ZPass<sup>SM</sup> is either in revenue service or being installed on facilities of the New York State Thruway Authority, MTA Bridges and Tunnels, the Port Authority of New York and New Jersey, the New York State Bridge Authority, the South Jersey Transportation Authority, the New Jersey Turnpike Authority, the New Jersey Highway Authority, the Maryland Department of Transportation the Delaware River Port Authority, and the Delaware Turnpike.

Other significant toll facilities in the Northeast which use Mark IV technologies in the 902-928 MHz band include the Dulles Toll Road, the Greenway Toll Road and the Coleman Bridge in Virginia. Deployment of Mark IV 902-928 MHz band DSRC technology is underway on facilities of the Massachusetts Turnpike Authority. Additionally, the Orlando-Orange County Expressway, the Metro Dade County Causeway in Florida and the Illinois Tollway have Mark IV systems in service. Mark IV is also a major supplier of 902-928 MHz band DSRC technology for the Canadian ITS market.

## DISCUSSION

Mark IV supports the allocation of spectrum amounting to 75 MHz in the 5.850-5.925 GHz band to supplement the current use of the 902-928 MHz band for the deployment

of DSRC systems. It is both appropriate and timely for the Commission to allocate supplemental spectrum to provide for existing, emerging and future DSRC-based services.

Mark IV strongly recommends that the FCC review and coordinate spectrum compatibility for the proposed 75MHz allocation with Canadian and Mexican spectrum policymakers, prior to finalizing any allocation details and prior to establishing future usage parameters. Because of the inherent mobility of ITS applications and uses, concurrence among the affected North American regulatory administrations on radio spectrum allocations for DSRC technologies to be deployed in the United States, Canada and Mexico is essential to all parties in the surface transportation industry. Users seek seamless ITS services and service providers seek maximized market opportunities. This is especially true for future commercial vehicle operations envisioned by the FHWA and the inter-modal freight community.

Mark IV also supports the Commission's proposals to offer DSRC licensees maximum technical flexibility "so that market forces can optimize development."<sup>1</sup> Section 7 of the Communications Act of 1934, as amended (the Communications Act or the Act), states that it is "the policy of the United States to encourage the provision of new technologies and services to the public."<sup>2</sup> More recently, Congress reinforced section 7 by

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<sup>1</sup> NPRM, para. 28.

<sup>2</sup> 47 U.S.C. § 157.

adding section 706 of the Telecommunications Act of 1996.<sup>3</sup> Section 706(a) encourages the deployment of advanced telecommunications services by directing the Commission to "encourage the deployment on a reasonable and timely basis of advanced telecommunications capability to all Americans."<sup>4</sup> These congressional directives make clear that the flexibility proposed by the Commission which we support here is sound administrative policy and directly responsive to national technology development initiatives.

While much work has taken place in the United States to develop DSRC standards, an industry agreement on standards affecting significant technical parameters for deployment and operations in the 5.9 GHz band has not been reached. Industry efforts have been largely focussed on supporting 902-928 MHz band DSRC technology. Mark IV is concerned that even though the developing U.S. standards (ASTM E-17.51 Draft 7- Layer 1, proposed Layer 2 and IEEE P1455 Layer 7) are formatted using the OSI 7 layer model intended to permit physical layer changes, there are still significant open issues which could mean that adoption of this model will impair opportunities for advanced DSRC system performance.

Significant additional effort will be required by U.S. standards development organizations, industry and government to establish suitable standards for 5.9 GHz band DSRC equipment. It is essential that standards for DSRC products have widespread market appeal so that public and private agencies responsible for delivering ITS services in the U.S.

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<sup>3</sup> Telecommunications Act of 1996, Pub. L. No. 104-104, 110 Stat. 56, *codified at* 47 U.S.C. §§ 151 *et seq.* Section 706 of the 1996 Act, however, was not codified in the Communications Act. 1996 Act, § 706 Advanced Telecommunications Incentives.

<sup>4</sup> 1996 Act, § 706(a).

and elsewhere in North America can succeed in their ITS service delivery programs. The Commission's role in this process should be to maintain a flexible regulatory environment for DSRC deployments to accommodate the continuing evolution/development of DSRC standards promoting technology advances. This is sound public policy and as described above is directly responsive to the Commission's statutory mandate.

The Commission's proposed channelization of the 5.850-5.925 GHz band should include flexible options such as permitting the band to be divided into several sub-bands for application specific deployments (similar to the approaches taken in Japan and Europe). Mark IV also recommends that the allocation proposed here provide for channelization options, permissible emissions and maximum transmitter output power levels to accommodate anticipated data rates of 5 mbps or greater.

The maximum transmitter output of 4 W with a radiated emission limit of 30 W EIRP should be adopted subject to the Commission's policies permitting increases in transmitter power to account for transmission line losses.<sup>5</sup> This would permit relatively low

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<sup>5</sup> See the Commission's clarification of its policies in Amendment of Part 2 and 15 of the Commission's Rules regarding Spread Spectrum Transmitters, Report and Order, ET Dkt. No. 96-8, 12 FCC Rcd 7488,7497 (1997) where it states:

"The Commission already permits manufacturers of systems that must use long transmission lines to measure transmitter output at the connection between the transmissions line and the antenna. This permission, however, is done on a case-by-case basis and must be justified during the certification procedure. Generally, the manufacturer must be able to demonstrate that the system will be professionally installed and that the design or placement of the equipment requires the use of long transmission lines." (Para. 15)

short roadside frequency re-use distances (related to the proposed 30 W EIRP limit), all of which yield cost/spectrum efficiency benefits for consumers and other users.

Mark IV strongly supports the Commission's proposal to adopt the ITS America definitions of DSRC applications which could include a mix of commercial, private and public safety uses. ITS applications enabled by DSRC should be permitted to transmit messages containing digitized voice announcements for services such as public safety, traveler information and similar store-and-forward public messaging applications. Mark IV does not support the use of this proposed spectrum allocation for telephony applications, i.e. cellular, SMR or PCS clones. While the Commission indicates in its NPRM (para. 46) that exclusive licensing will be addressed in subsequent phases of these proceedings, Mark IV also confirms here its support for adoption of a licensing scheme comparable to that already in place for non-multilateration LMS services in the 902-928 MHz band.

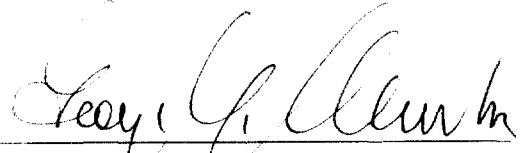
#### CONCLUSION

The Commission's goals in these proceedings should be to preserve deployment opportunities for the expanded, emerging and future ITS applications described in ITS America's Petition. Allocation of 75 MHz of spectrum in the 5.850-5.925 GHz band for

transportation services to improve highway safety and efficiency is an essential first step in this process.

Respectfully submitted,

Mark IV Industries, Limited, I.V.H.S. Division

By   
George Y. Wheeler

Koteen & Naftalin  
1150 Connecticut Avenue, N.W.  
Suite 1100  
Washington, D.C. 20036  
(202) 467-5700

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